

REMARKS

The present application was filed on January 27, 1999 with claims 1-20. Claims 1-20 remain pending in the present application. Claims 1, 10, 19 and 20 are the independent claims.

Claims 4 and 13 stand rejected under 35 U.S.C. §112, second paragraph, as failing to provide proper antecedent basis for the phrase "the audio information." Herein, Applicants have amended claims 4 and 13 in a manner which is believed to overcome the rejection.

Claims 1-20 stand rejected under §112, first paragraph, as allegedly failing to comply with the written description requirement. More particularly, the Examiner argues that the specification fails to provide adequate support for the limitation "the plurality of programs comprising separate and independent information signals not derived from a common signal source" as set forth in the independent claims. Applicants respectfully traverse. The limitation in question is in fact fully supported by the specification. For example, the specification at page 6, lines 16-27, provides as follows, with emphasis supplied:

FIG. 1 shows a joint multiple program audio coder 10 in accordance with an illustrative embodiment of the invention. The coder 10 includes a PAC encoder bank 12 which is comprised of N PAC audio coders ENC-1, ENC-2, ... ENC-N, and a two-dimensional joint bit allocator 14. A set of input audio signals 16, including audio programs designated Audio 1, Audio 2, ... Audio N, are supplied to PAC encoders ENC-1, ENC-2, ... ENC-N, respectively, in the PAC encoder bank 12. The set of N audio programs are also referred to herein as a "cluster" of programs. The cluster of N audio programs may be a subset of a total number N_T of programs to be transmitted in a given system, i.e., $1 \leq N \leq N_T$. The remaining $N_T - N$ programs, if any, may include, e.g., data programs that are not included in the joint audio coding operation. The joint bit allocator 14 allocates a common pool of available bits for a given time interval among the N audio programs, using techniques which will be described in greater detail below. This allows larger percentages of the available bits to be allocated to the more demanding audio programs, on a substantially instantaneous basis.

The specification, at page 3, lines 25-26, further states as follows regarding digital audio broadcasting (DAB) implementations of the invention, again with emphasis supplied:

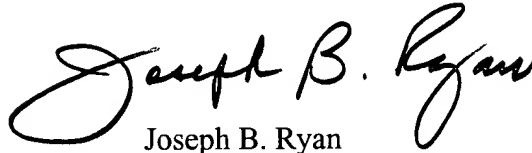
The present invention provides methods and apparatus for implementing joint coding in multiple program transmission applications, such as multiple program DAB.

There is additional disclosure in the specification regarding more particular examples of multiple program DAB systems in which the invention may be implemented. These include, as indicated at page 3, lines 14-22, otherwise conventional in-band DAB systems and satellite DAB systems. In typical conventional implementations of such multiple program DAB systems, each audio program generally corresponds to a separate and independent information signal not derived from a common signal source. For example, one audio program may be a rock music channel of the multiple program DAB system, comprising a sequence of rock music tracks, and another audio program may be a jazz music channel of the multiple program DAB system, comprising a sequence of jazz music tracks. Clearly such programs may constitute separate and independent information signals not derived from a common signal source, because the audio information in one program is entirely separate and independent of the audio information in the other program.

Thus, it is readily apparent that the above-cited portions of the specification, taken together, indicate that the audio programs Audio 1, Audio 2, . . . Audio N of the set of audio programs 16 in FIG. 1 may be programs of an otherwise conventional multiple program DAB system. Such conventional multiple program DAB systems are well known to include programs that comprise separate and independent information signals not derived from a common signal source. Applicants are the first, however, to apply the claimed criticality measure based bit allocation across multiple such programs in this context. The rejection under §112, first paragraph, is therefore believed to be improper.

Accordingly, claims 1-20 as amended are believed to be in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, reading "Joseph B. Ryan". The signature is written in a cursive style with a large, looping initial "J".

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